

CLAIMS

1. A flow channel for liquids characterised in that at least one wall defining the flow channel is of such a configuration that when a liquid flows therethrough at least one flow region is produced which has an axial and simultaneous tangential flow component.
2. A flow channel according to claim 1 characterised in that the wall is of such a configuration that a circulating spiral flow is produced in region-wise manner or completely.
3. A flow channel according to claim 1 or claim 2 characterised in that the flow cross-section of the flow channel is non-cylindrical and is twisted in itself in the axial direction so that when the liquid flows therethrough a spiral-form flow is produced at least in region-wise manner.
4. A flow channel according to claim 3 characterised in that the length of a tube portion which is completely wound once in itself (wavelength) is in a given ratio to the length of the smallest bisector of the cross-sectional area of the flow channel, which is in the region of 6 to 7, particularly preferably in the region of 6.44.
5. A flow channel for liquids, in particular according to one of the preceding claims, characterised in that the wall delimiting the flow channel is so shaped that the free flow cross-section of the flow tube is substantially oval.
6. A flow channel according to claim 5 characterised in that the ratio of the length of the longer axis of the oval flow cross-section to the shorter axis of the flow cross-section is greater than 1, preferably greater than or equal to  $\sqrt{2}$ .

7. A flow channel according to one of the preceding claims characterised in that the flow cross-section decreases in the flow direction.
8. A flow channel according to one of the preceding claims characterised in that the flow cross-section enlarges in the flow direction.
9. A flow channel according to at least one of the preceding claims characterised in that the flow cross-section is quadrangular, triangular, hexagonal or octagonal.
10. A flow channel according to one of the preceding claims characterised in that it is in the form of a tube.
11. A flow channel for liquids, in particular according to one of the preceding claims, wherein the flow channel is so designed that within the channel when a liquid flows therethrough substantially two flow regions are produced, which do not or which scarcely interpenetrate and which are wrapped around in the nature of a double helix.
12. A flow channel according to claim 11 characterised in that within each flow region there are produced further sub-flow regions which in turn are again intertwined with each other.
13. A flow channel according to claim 11 or claim 12 characterised in that the two core flow channels are of a substantially round cross-sectional configuration and form a main fluid flow and that produced in the region of the flow tube which is not occupied by the main flow cores are one or more secondary flows, wherein no or preferably only a slight fluid exchange takes place between a main flow and a secondary flow area and foreign bodies in the entire fluid flow are preferably transported in the secondary flow area.